

EPA ORD-Region 6-States Discussion on State Science Priorities and Needs

September 29, 2020

Meeting Summary

US EPA ORD Research Update, including PFAS treatment and COVID-19 research

Becky Keogh, Arkansas Department of Environmental Quality

- AR has been approved some funding to coordinate a research project with the University of Arkansas to detect and monitor SARS-CoV-2 in wastewater. Missouri is conducting a similar study.
 - ACTION: Keogh will send program's research contacts to ORD's Lisa Matthews.
 - Shawn Ryan, EPA ORD: There are several states working on this and we're aware but still working out how to coordinate on this and compile information.
- Concern raised regarding land application of PFAS biosolids and need to reassure public that it's not a public health hazard.
 - ACTION: Schedule follow-up call to discuss current thinking around PFAS in municipal biosolids to inform permitting strategy.

Jim Kenney, New Mexico Environment Department

- NM is investing heavily in detecting and monitoring SARS-CoV-2 in wastewater. Would really like to be one of the states partnering with EPA on this. Have funding from CDC.
 - ACTION: Jennifer Orme-Zavaleta work with Ken McQueen & David Gray to connect Kenney with ORD's Jay Garland, Kevin Oshima and Tim Watkins.
- PFAS
 - Interested in biosolids and land applications/landfills.
 - Oil and gas operations using polyfluorinated chemicals in hydraulic fracturing.

State Perspectives: Science Priorities & Needs

Arkansas

Becky Keogh, Arkansas Department of Environmental Quality

- Pleased to have EPA ORD visit AR state environmental and public health labs in March 2020.
- PFAS – AR doesn't have manufacturing sources, but the ubiquitous sources are of concern.
- Nutrient and mineral management
 - Ecoregion water quality standards –high quality water streams; difficult to assess mineral impacts in terms of discharges; complex regulatory process
 - EPA's [[HYPERLINK](https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=CEMM&dirEntryId=347453) "https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=CEMM&dirEntryId=347453"] pulls together background datasets and provide information for states to look at background levels for salt and mineral content; network of streams for all 50 states.
 - ACTION: Gauge interest among Region 6 states to discuss SSWR's nutrient and mineral management research.
- Wildland fire management
 - Rice growers are entering harvest season
 - Arkansas State University is developing an app based on air quality forecasting to determine whether conditions are suitable for controlled burning in agriculture land
 - Bryan Hubbell, EPA ORD: Interested in the app development. Most of our collaborations have occurred on the West Coast, but we are interested in controlled burns in the South. This is a potential opportunity to integrate existing ORD tools (e.g. [[HYPERLINK](#)

"<https://www.epa.gov/air-research/smoke-sense-study-citizen-science-project-using-mobile-app>"] for wildland fire management.

- AR hopes to continue Fire Policy Forum next year; ORD's Wayne Cascio participated in the 2018 forum.
- **ACTION: Connect Bryan Hubbell with AR app developers to discuss potential opportunities to integrate existing ORD tools for wildfire management.**
- Dissolved oxygen/bacterial issues along the Buffalo National River (protected ag operations around river)

Richard McMullen, Arkansas Department of Health

- Needs outlined in compiled science needs document are appropriate
- COVID
 - Three researchers working with COVID wastewater monitoring as well as a commercial vendor interested in "mobile testing lab"; AR would like to participate in ORD's research efforts
 - Testing and evaluating methods around wastewater monitoring
 - Effectiveness of HVAC/HEPA filters; UV lighting
- Cost-effective technologies to remove minerals from drinking water

Gary Wheeler, Arkansas Department of Health

- Climate change
 - Increased frequency of floods, fires, hurricanes related to climate change
 - More information on the impacts of wildfires on carbon dioxide release and acceleration of climate warning
- COVID
 - Air and HVAC systems: Does changing the air flow/air exchange rate in a room make a difference in risk (e.g., viral load)?
 - There's no guaranteed benefit
 - Applies to disinfectant products as well
 - Application of ozone as a disinfectant
 - Need more information on biological consequences (along with disinfectants)

Louisiana

Chuck Carr Brown, Louisiana Department of Environmental Quality

- Chloroprene
 - Thank you for ORD's work on this – at a peer review stage with a new model
 - Will be moving forward with a new standard
- Ethylene oxide
 - NGOs are starting to get into this area – growing need for risk communication
 - Risk number can't even be detected by current methods of detection
 - National background is higher than the risk numbers being proposed
 - Nearest EPA monitor is almost 400 miles away from LA/TX; should we do our own monitoring?
 - In May, Texas established a long-term effects screening level of 2.4 ppb (which is the health-protective air concentration used to determine limits for proposed air permits in TX)
 - Years before ethylene oxide would be substituted out; any work on alternatives?
 - Tim Watkins, EPA ORD: CEMM is focusing on improving methods for real-time detection in the field and to reduce limits of detection; [[HYPERLINK](https://nepis.epa.gov/Exe/ZyNET.exe/P100YDPO.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2016+Thru+2020&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C16thru20%5CTxt%5C00000017%5CP100YDPO.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-) "<https://nepis.epa.gov/Exe/ZyNET.exe/P100YDPO.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2016+Thru+2020&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C16thru20%5CTxt%5C00000017%5CP100YDPO.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C->

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- Jennifer Orme-Zavaleta, EPA ORD: CDC's Agency for Toxic Substances and Disease Registry is also working on looking at ethylene oxide and developing a tox profile. EPA's [[HYPERLINK "https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=1025"](https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=1025)] and will be bringing in new literature.

Amanda Ames, State Drinking Water Administrator, Louisiana Department of Health

- PFAS
 - No state standard but some monitoring going on at high-risk systems; results have been below EPA health standard

New Mexico

Jim Kenney, New Mexico Environment Department

- COVID
 - Prevalence of wastewater detection studies to be able to turn into public health reality
 - HVAC system concerns
- PFAS
 - Companies offering treatment options; discussion around destruction falters
 - Legislature authorized funds (\$1-5M in PFAS treatment); welcome ORD's active participation
- Produced water from oil & gas operations
 - Consortium with New Mexico State University answering basic science questions such as treatability, standard method development
 - ECOS' Oil and Gas Caucus is looking at this (Kenney is Co-Chair with ND)
 - Suzanne van Drunick, EPA ORD: SSWR has a robust water reuse research program that collaborates with EPA Office of Water's [HYPERLINK "https://www.epa.gov/waterreuse/water-reuse-action-plan" \l":~:text=The%20National%20Water%20Reuse%20Action,of%20our%20nation's%20water%20re sources."].
 - Quantifying microbial contaminations in produced water
 - Identifying surrogates to measure system performance
 - Risk-based guidance for fit-for-purpose of water reuse
 - [HYPERLINK "https://hei-energy.org/funding-opportunities/rfa/e20-1-e20-2"] HEI-Energy is seeking to fund research to improve characterization of potential human exposures originating directly from the onshore development of oil and natural gas from unconventional resources. Funding decisions will be made in May 2021.
 - Quantify the spatial and temporal variability in community exposures to unconventional oil and natural gas development (UOGD)-generated chemical concentrations in 1) outdoor air and noise and 2) groundwater and surface water.
- Real-time remote monitoring and solutions
 - Example NOx and VOCs for oil and gas industry
 - Inexpensive and practical for compliance inspections
 - Company in NM (Skye Instruments) actively looking around bandwidth and connectivity, unique way to monitoring air emissions
 - Bryan Hubbell, EPA ORD: Interested in upcoming meeting about Skye; may have some ideas around ways to help
 - Putting out Ozone rules (VOCs, NOx) around gas companies, constitutes major sources in NM

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- ACTION: Bryan Hubbell to share information on air monitoring technologies.

Oklahoma:

Stephen Baldrige, Office of the Oklahoma Secretary of Energy and Energy

- Produced water
 - Echo previous comments on produced water treatment technologies
 - OK tried to receive delegation for produced water; hang-up is knowing the treatment technologies available for various contaminants
- Carbon capture technologies

Travis Splawn, Oklahoma State Department of Health

- COVID
 - Sewage testing through correctional facilities
 - Aerosol versus respiratory droplet transmission
- Medical marijuana regulation
 - Pesticide usage on marijuana and cannabis products

Texas:

Jon Niermann, Texas Commission on Environmental Quality

- Produced water
- Drinking Water: PFAS and pharmaceuticals
- PFAS
 - Cleanup standards from a RCRA perspective
- Air monitoring
 - Need to translate information in a way that's usable for the general public
 - Citizen collected data is a new frontier
 - Increased use for emergency responses (hurricanes)

Heidi Bojes, Texas Department of State Health Services

- Exposure to hazardous and toxic substances
 - Sheer number of substances and sources (~380 hazardous waste sites in TX, 56 listed on EPA's National Priority List)
 - Can only comprehensively evaluate health risk for a subset of these sites
 - Take decades to fully remediate
- PFAS, GenX
 - How to keep up with the new ones that have little information? Difficult to regulate and evaluate exposures.
 - Jeff Frithsen, EPA ORD: ORD Chemical Safety for Sustainability (CSS) research program's approach is to categorize PFAS chemicals and then test representative PFAS chemicals to establish categorical definitions. This approach is known as high-throughput screening, and the results inform subsequent in vivo testing, risk assessment efforts, and selection of new sets of PFAS for future testing.
 - Toxicity information on ~7,000 PFAS chemicals available on EPA's [[HYPERLINK "https://comptox.epa.gov/dashboard"](https://comptox.epa.gov/dashboard)]
 - Anticipate releasing Tier 1 synthesis report on first group of PFAS chemicals around end of March 2021.
 - If states are interested, CSS is happy to provide briefings about PFAS testing and analysis approach.
- Environmental health inequities/disparities
 - Disproportionate amount of hazardous sites in socially disadvantaged communities

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- Synergistic effect of environment on communities

Wrap-Up

Jennifer Orme-Zavaleta: Thanks to everyone for sharing their states' science needs. There are a lot of common themes.

Chris Robbins, EPA ORD: We will be following up with Region 6. It would be beneficial to have longer conversations around wastewater monitoring to detect community spread of COVID, ethylene oxide, and produced water/water reuse.